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**TITLE:** THREE-PHASE  
COMMUTATOR MOTOR  
**PUBN-DATE:** September 3, 1993

**INVENTOR-INFORMATION:**

NAME	COUNTRY
BAN, ITSUKI	

**ASSIGNEE-INFORMATION:**

NAME	COUNTRY
SECOH GIKEN INC	N/A

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**INT-CL (IPC):** H02K023/58 , H02K003/28

**US-CL-CURRENT:** 310/128 , 310/233

**ABSTRACT:**

PURPOSE: To prevent a spark discharge between a commutator and a brush by

coupling an armature coil to a commutator segment in a delta-connection.

CONSTITUTION: A commutator 4 is energized at armature coils (EC) 3a, 6a and ECs 3c, 6c in a direction of an arrow in a rotating zone of 60 degrees in a direction of an arrow A, and short-circuited with ECs 3a, 6b by a brush 5b. The ECs 3a, 6a and ECs 3b, 6b are energized in a direction of an arrow in a next rotating zone of 60 degrees, and the ECs 3c, 6c are short-circuited by a brush 5a. The ECs 3a, 6a are short-circuited by the brush 5b in a next rotating zone of 60 degrees, and the ECs 3b, 6b are energized in a direction of an arrow, and the ECs 3c, 6c are reversely energized to the direction of the arrow. The ECs 3a, 6a and 3c, 6c are reversely energized to the direction of the arrow in a next rotating zone of 60 degrees, and the ECs 3b, 5b are short-circuited by the brush 5a. Incidentally, widths of the brushes 5a, 5b are smaller than  $1/2$  of the widths of commutators 4a-4c. A separate angle of the brushes 5a, 5b becomes an odd times as large as  $1/2$  of the widths of commutator segments 4a-4c.

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